Abstract

A method of designing a multi-stage rotor for the low pressure compressor of a gas turbine engine uses a knowledge-based product model software program to create a parametric, generative product model. The product model is embodied in a knowledge-based engineering system. The model is created by the program through user selection of various structural feature options available for the rotor. The product model software program uses its internal knowledge-base of configuration-dependent parameter relationships and rules to design the model. Various types of analyses may be conducted to validate the model. The model may be changed, if necessary, as a result of the analyses. The computer-generated model of the low pressure compressor rotor is available as an output file for various uses, including as an input to a program for controlling creation of parametric models of tooling to manufacture the rotor.